

Application No.: 10/777,563
Response dated: February 28, 2008
Reply to Office Action: November 28, 2007

REMARKS

Reconsideration of the application is respectfully requested.

Claims 1-14 are before the Examiner. Amendments to the Claims are shown based on Claims 1-14 of the corresponding issued U.S. Patent No. 6,300,439 ("US-439").

Claims 1, 2, 5, 6, and 8 have been amended as previously discussed in the RCE filed October 18, 2007. Claims 3 and 9 have been cancelled. Claims 1, 2, 4-8, and 10-14 remain in the application.

Consistent with the RCE filed October 18, 2007, Claim 1 has been twice amended to further clarify that the recited catalyst system comprises a Group 15 containing tridentate ligated metal catalyst compound. In addition, Claim 1 has been amended to further clarify that R¹ and R² are independently a linear, branched or cyclic C₂ to C₂₀ alkyl group. Support for this amendment may be found, for example, at Col. 3, lines 65-66 of US-439.

Claim 2 has been amended to further limit R¹ and R² to a preferred embodiment. Support for this amendment may be found, for example, at Col. 3, lines 66-67 of US-439.

Claims 5 and 6 have been amended to further clarify Applicant's presently claimed invention. Support for these amendments may be found, for example, at Col. 4, lines 45-65 of US-439.

Claim 8 has been amended to remove references to limitations removed via amendments made to Claim 1.

No new matter has been added.

Rejection under 35 U.S.C. §112

Claims 1, 2, 4-8 and 10-14 have been rejected under 35 U.S.C. §112, second paragraph as being indefinite. The Action states that the recited element L cannot have four bonds without having a formal charge, and thus the structure renders the claims indefinite. Applicant respectfully disagrees.

Applicant's recited structure is known to one skilled in the art to represent a coordination compound, wherein the tridentate ligand is coordinated with the metal atom (represented herein as element M.) The bond between element L to the metal M is well

Application No.: 10/777,563
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known in the art to represent a coordinate covalent bond, which is also known in the art as dative bond. The dative bond represents a description of covalent bonding between two atoms in which both electrons shared in the bond come from the same atom. Accordingly, in maintaining the formulism by which coordination compounds are described in the art, no formal charge need be included on element L. These compounds are embodied in Examples 4, 5, 7, and 9 of the instant application, and have been characterized as being tridentate via ¹H NMR. As such, removal of the rejection is respectfully requested.

Rejection under 35 U.S.C. §102

Claims 1, 2, 4-8, and 10-14 have been rejected under 35 U.S.C. § 102(b) as being anticipated by JP 10-330412 to Sigmura et al. (JP-412), as evidenced by the English translation thereof. Applicant respectfully disagrees.

JP-412 discloses at Page 4, claim 1, an olefin polymerization catalyst that characteristically comprises

(A) a transition metal compound from Group 4 of the Periodic Table that contains a ligand that has the cyclopentadienyl skeleton;

(B) a transition metal amide compound represented by general formula (I) or (I-1)



wherein

M is a transition metal atom from Groups 3-6 of the Periodic Table,

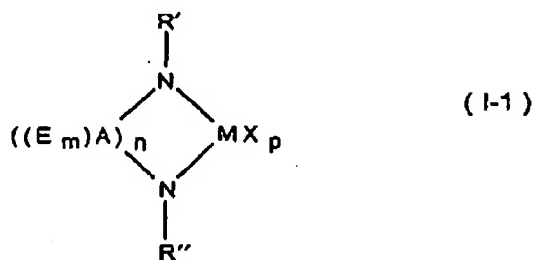
j is the valence of the transition metal atom M,

k is an integer from 1 to j,

each R is independently selected from hydrocarbyl and halogenated hydrocarbyl wherein two of the groups R may be connected to each other to form a ring, and

X represents the hydrogen atom, halogen atoms, C₁ to C₂₀ hydrocarbyl, C₁ to C₂₀ halogenated hydrocarbyl, an oxygen-containing group, a sulfur-containing group, or a silicon-containing group, wherein when j-k ≥ 2 the X's may be the same as each other or may differ from one another,

Application No.: 10/777,563
 Response dated: February 28, 2008
 Reply to Office Action: November 28, 2007



wherein

M represents a transition metal atom from Groups 3-6 of the Periodic Table, R' and R'' are each independently selected from the hydrogen atom, hydrocarbyl, halogenated hydrocarbyl, organosilyl groups, and substituents that contain at least 1 element selected from nitrogen, oxygen, phosphorus, sulfur, and silicon,

m is an integer from 0 to 2,

n is an integer from 1 to 5,

A is an atom from Groups 13-16 of the Periodic Table, wherein when $n \geq 2$ the plurality of said A's may be the same as each other or may differ from one another, and

E is a substituent that contains at least 1 element selected from carbon, hydrogen, oxygen, halogen, nitrogen, sulfur, phosphorus, boron, and silicon, wherein when a plurality of groups represented by E are present said plurality of groups represented by E may be the same as each other or may differ from one another and two or more groups represented by E may be connected to each other to form a ring; and

(C) at least one compound selected from

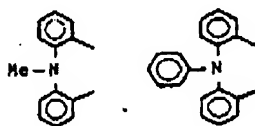
(C-1) organometal compounds,

(C-2) organoaluminumoxy compounds, and

(C-3) compounds that react with the aforesaid transition metal compound (A) or transition metal amide compound (B) to form an ion pair.

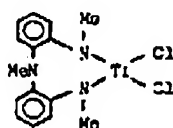
JP-412 fails to disclose or suggest Applicant's recited tridentate ligand. Furthermore, JP-412 discloses the following bridging groups: $-((Em)A)_n-$

Application No.: 10/777,563
 Response dated: February 28, 2008
 Reply to Office Action: November 28, 2007

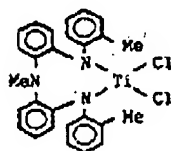


(See numbered paragraph (0104));

Furthermore, this ligand is disclosed by JP-412 to be a bidentate ligand (which is correct in view of the location of the benzene rings in the bridging group), which is in contrast to Applicant's presently claimed invention. This bidentate ligand is further disclosed in numbered paragraphs (0112) and (0140) as follows:



(See numbered paragraph (0112), page 37 of JP-412.)



(See numbered paragraph (0140), page 51 of JP-412.)

Accordingly, JP-412 fails to disclose or suggest Applicant's presently claimed invention. Withdrawal of this rejection is respectfully requested.

Claims 1, 2, 4-8 and 10-14 have been rejected under 35 U.S.C. § 102(b) as being anticipated by JP 10-330416 to Sigimura *et al.* (JP-416.)

JP-416 has an almost identical disclosure to that of JP-412. Likewise, JP-416 fails to disclose Applicant's recited tridentate ligand. The structures shown above in JP-412 numbered paragraphs (0104), (0112), and (0140) are disclosed in identical fashion in JP-416 in numbered paragraphs (0077), (0085), and (0113) respectively.

Accordingly, JP-416 also fails to disclose or suggest Applicant's presently claimed invention. Withdrawal of this rejection is respectfully requested.

Application No.: 10/777,563
Response dated: February 28, 2008
Reply to Office Action: November 28, 2007

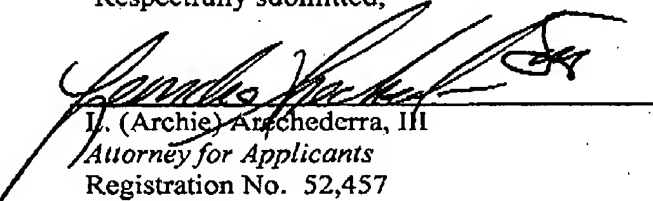
Claims 1-14 have been rejected under 35 U.S.C. § 102(b) as being anticipated by WO 98/34961 to Imuta *et al.*, and under 35 U.S.C. § 102(e) as being anticipated by the U.S. equivalent to WO 98/34961, namely U.S. Patent No. 6,255,419 to Imuta *et al.* (collectively referred to as Imuta).

The Imuta disclosures are directed to transition metal amide compounds having a bidentate ligand. In fact, the Imuta disclosure is similar in nearly all respects to JP-412 and JP-416, and Imuta and JP-412 and JP-416 have the same common inventors. Similar to the above discussed references, Imuta fails to disclose or suggest Applicant's recited tridentate ligand. The above referenced structures of JP-412 at numbered paragraphs (0104) and (0140) are disclosed in identical fashion in Imuta at Col. 47, lines 20-30 and at Col. 58, lines 45-60, respectively. Accordingly, Imuta also fails to disclose or suggest Applicant's presently claimed invention. Withdrawal of the rejection is respectfully requested.

Applicant respectfully requests that all rejections be withdrawn and solicit a prompt notice of allowability. In the alternative, Applicant invites the Office to telephone the undersigned attorney if there are any other issues outstanding which have not been presented to the Office's satisfaction.

Respectfully submitted,

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Date


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